

THREE RESPONSES TO FRUSTRATION AND
THEIR EFFECTS UPON SUBSEQUENT AGGRESSIVENESS

By
ANASTASIA E. WELLS

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA
1970



TO MY WONDERFUL Nephew
ARTHUR

ACKNOWLEDGMENTS

The writer would like to express her appreciation to all those who contributed to the preparation of this dissertation.

Thanks are due to Dr. Lynn Cunningham, Dr. Hugh Davis, Dr. Henry Greter, Dr. Stephen F. Langulis, and Dr. Madeline Hays, who served as members of the author's supervisory committee. Dr. Cunningham and Dr. Davis were especially helpful in supplying support and direction with the study. Dr. Langulis not only assisted in defining the problem but also offered encouragement to test it out. Dr. Hays was relied upon for statistical assistance, and also contributed with her time and interest whenever it was necessary.

To Dr. Henry Greter, chairman of the supervisory committee, the author wishes to express a deep appreciation. Dr. Greter supplied her with support and guidance not only on this dissertation but throughout her entire graduate study.

A special note of thanks is also added to Dr. Marvin Rice, Dr. Robert King, and Dr. Marvin Shaw for their assistance with some of the equipment. Appreciation is also given to the author's husband, Arthur, without whose cooperation at home this study could not have been completed.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iii
LIST OF TABLES	v
LIST OF FIGURES	vi
ABSTRACT	vii
CHAPTER	
I INTRODUCTION	1
II METHOD	24
III RESULTS	33
IV DISCUSSION	47
V SUMMARY	56
APPENDICES	59
APPENDIX A FIVE-POINT SCALE - GUILT	60
APPENDIX B FIVE-POINT SCALE - ANXIETY	61
REFERENCES	62
BIOGRAPHICAL SKETCH	65

LIST OF TABLES

Table		Page
1	Means and Standard Deviations of Base Level Systolic Blood Pressure	34
2	Means and Standard Deviations of Aggression Scores Used as a Pre-measure of Aggres- siveness	34
3	Means of Systolic Blood Pressure within All Groups and Conditions	36
4	Summary Table for the Analysis of Variance: Systolic Blood Pressure	37
5	Means for Aggression Scores for All Groups ..	42
6	Summary Table for Analysis of Variance: Aggression Scores	43

LIST OF FIGURES

Figures	Pages
1 Mean Systolic Blood Pressure at Three Readings at Each Level of Frustration	38
2 Mean Systolic Blood Pressure at Three Readings at Each Level of Response to Frustration	39
3 Mean Aggression Scores for All Responses to Frustration on Both Pre-measure and Post-measure for Both Levels of Frustration ...	44

Abstract of Dissertation Presented to the Graduate Council in
Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

THREE RESPONSES TO FRUSTRATION AND THEIR
EFFECTS UPON SUBSEQUENT AGGRESSIVENESS

By

Anastasia E. Wells

March, 1970

Chairman: Dr. Harry Grater
Major Department: Psychology

Hokanson and his colleagues (1961, 1962a, 1962b, 1963, 1966) were among the few investigators that looked into the physiology of catharsis. This paper is essentially a replication of Hokanson's major findings as well as an extension of his work. Hokanson and his colleagues found that experimentally produced frustration consistently resulted in increased physiological arousal. While several indices were tested, systolic blood pressure was found to be the most reliable indicator of this arousal. In addition, they found that the direct physical and verbal expression of aggression towards the frustrator consistently resulted in a return of systolic elevations to pre-frustration levels. Aggression following frustration was found to be tension-reducing. Those individuals who were frustrated and not allowed to aggress were found to maintain their systolic elevations.

This paper investigated three responses to frustration: (1) counteraggression against a frustrator; (2) having no opportunity to aggress following frustration; (3) the discussion of frustration. The efficacy of these responses in reducing tension was studied. Following this, the overall effect of these three responses to frustration upon subsequent aggressiveness was determined. It was predicted that counteraggression and discussion of frustration will be found to be equally effective in reducing frustration-produced tensions. However, it was hypothesized that the counteraggression will result in an increase in subsequent aggressiveness, while the discussion will be followed by no change in aggressiveness.

Seventy-two male college age subjects were randomly assigned to two separate three factor designs. Three independent variables were employed: (1) Frustration vs. no frustration; (2) Three responses to frustration--counteraggression, no aggression, and discussion of frustration; and (3) Repeated measures of (a) systolic blood pressure taken before and after frustration and after the response to frustration, and (b) aggression scores taken before and after the experimental procedures. The systolic blood pressure readings and the aggression scores served as the primary dependent variables. Essentially the same procedure employed by Hokanson was used in this study, with the addition of the discussion condition and the pre- and post-measures of aggression.

Two three factor analyses of variance were carried out after which several post hoc comparisons were made on certain pairwise cell means. The results obtained supported all the hypotheses. Hokanson's major findings were replicated. In addition, the discussion of frustration was found to be as effective as counteraggression in reducing frustration-produced tensions. Insofar as subsequent aggressiveness was concerned, counteraggression was found to increase it, while the discussion of frustration produced no change in it. The discussion of frustration appears to be an efficient mechanism for handling frustration. Several alternative hypotheses and limitations of the study were offered which supply a direction for future research in this area.

CHAPTER I

INTRODUCTION

The chief aim of this study is to investigate the effects that certain responses to frustration have upon subsequent aggression. The paper focuses on locating an effective method for decreasing the potential for aggression. When Dollard, Doob, Miller, Mowrer and Sears (1939) in their classic book, Frustration and Aggression, re-examined the Freudian notion of catharsis, they paved the way for an abundance of research in this area. According to the catharsis hypothesis postulated by them, Dollard and his colleagues (1939, p. 50) insist that the expression of aggression results in at least a momentary reduction of subsequent aggression. Aggression was viewed as an appropriate response to frustration. It was said to relieve frustration as well as to produce a reduction in subsequent aggression. Many studies support this hypothesis (Thibaut, 1950; Thibaut & Coules, 1952; Worchel, 1957; Pepitone & Reichling, 1955; Feshbach, 1955, 1961, 1965; Rosenbaum & deCharms, 1960). However, still other studies refute the hypothesis that subsequent aggression is reduced (Kenny, 1953; Siegel, 1956; Løvaas, 1961; Mussen & Rutherford, 1961; Bandura & Huston, 1961; Bandura, Ross, & Ross, 1963). In fact, the latter studies

show consistently that subsequent aggression is increased rather than reduced following aggressive behavior.

Until researchers began to look into the physiology of catharsis (Kahn, 1960; Hokanson, 1961; Baker, 1967, 1969; Gambaro & Rabin, 1969), a stalemate existed with catharsis research. During recent years, Hokanson and his colleagues have performed a series of studies investigating the nature of the cathartic effect. A review of these studies will follow, but for the moment a comment will be made concerning their findings. Hokanson and his colleagues found that experimentally produced frustration consistently resulted in increased physiological arousal. While several indices were tested, systolic blood pressure was found to be the most reliable indicator of this arousal. In addition, they found that the direct physical and verbal expression of aggression toward the frustrator consistently resulted in a return of the systolic elevations to pre-frustration or base level. [Aggression following frustration was found to be tension-reducing.] Those individuals who were frustrated and not allowed to aggress were found to maintain their systolic elevations.

The contribution that Hokanson's work makes to catharsis research is that it permits us to predict a physiological effect that can be measured following certain frustration-aggression sequences. The tension-reduction aspect of counteraggression against a frustrator has certainly

found support in Hokanson's investigations. However, whether or not (1) there exists a non-aggressive method for dealing with frustration that is equally tension-reducing; and (2) whether or not subsequent aggression is actually decreased or increased as a result of this tension-reduction remains to be investigated. These are the areas of exploration for this dissertation.

Considering the overall effect of tension-reduction upon subsequent aggression, traditional catharsis researchers would predict a decrease in subsequent aggression. They would hypothesize that following frustration and counter-aggression, aggressive energy is drained, drive is reduced, and aggressive behavior decreases. However, a more parsimonious prediction, based on learning theory, would be that following the frustration-aggression sequence, subsequent aggression increases. Considering the reinforcement value of tension-reduction, the probability is high that aggression will increase. This is one of the hypotheses to be tested in this paper. If support can be obtained for an increase in aggression following tension-reduction from frustration and counteraggression, it can have provocative ramifications for dealing with frustration. The hypothesis suggests that if one is encouraged to respond to frustration by verbal or physical aggression, one becomes more aggressive subsequently. In order to reduce the potential for subsequent aggression, then, a non-aggressive method for dealing with frustration

may have to be employed. From clinical observation, it is known that the simple clarification and expression of feelings often bring relief from emotional tensions. Clinical experience, therefore, suggests that the discussion of frustration may be an effective non-aggressive response to frustration.

This paper investigates three responses to frustration: (1) counteraggression against a frustrator; (2) having no opportunity to aggress following frustration; (3) discussion of the frustration. The efficacy of these responses in reducing tension will be studied. Following this, the overall effect of these three responses to frustration upon subsequent aggressiveness will be determined. It is predicted that counteraggression and discussion of frustration will be found to be equally effective in reducing frustration-produced tensions. However, it is predicted that the counteraggression will result in an increase in subsequent aggressiveness while the discussion will be followed by no change in aggressiveness.

Review of Literature

Hokanson's work. Hokanson (1961) studied the effects that (a) level of frustration, and (b) anxiety over punishment had on overt aggression. His study provided a more direct test of some of the classical frustration and aggression hypotheses as they applied to overt, physical aggression. Typically, "overt" aggression in catharsis

research was measured by means of questionnaires, ratings, interviews concerning the feelings of unfriendliness toward the frustrator, and a number of other indices representing displaced aggression, e.g., doll play and TAT content. Such questionnaires and ratings are vulnerable to the subject's conscious control over his responses in a socially desirable direction. Furthermore, unfavorable ratings of the experimenter, or aggressive TAT content, may express merely negative evaluations of the frustrator, and not "aggression" in the strict sense required by the specification (Dollard et al., 1939) that the goal response of the instigation to aggression involves inflicting injury to an organism. Hokanson attempted to overcome these difficulties by using the application of direct, physical pain to the frustrator (electric shocks) as measures of aggression. Furthermore, his equipment enabled him to look at the aggressive response along three dimensions: number, duration, and pressure of shocks.

Hokanson's (1961) study employed an orthogonal design, using 80 undergraduate males, varying (a) test hostility; (b) level of experimental frustration; and (c) level of retaliatory anxiety. The test hostility was determined by the subjects' responses to Siegel's (1956) Manifest Hostility Scale and to three TAT protocols which were scored for hostile content. Basically, subjects who consistently scored above the median on these measures were assigned to

the High test hostility group, while those who scored below were assigned to the Low test hostility group. The frustration manipulation was established by asking the subjects to count backwards from 100 to 1 by three's as quickly as possible. Subjects assigned to the High frustration condition were then exposed to repeated interruptions, insults, and sarcastic remarks by the experimenter. In the Low frustration condition, the experimenter omitted these remarks and allowed the subjects to reach zero. The retaliatory anxiety variable was manipulated by leading half of the subjects to believe that the experimenter had the potential for inflicting physical pain to them via electric shocks if they did not cooperate fully during the experiment. Following these experimental manipulations, the subjects were given a number of socially sanctioned opportunities to aggress against the experimenter by administering electric shocks to him. The subjects' behavior with respect to the plunger activating the shock was analyzed along three dimensions: number of shocks, average duration per shock, and the mean pressure exerted. In addition to all these data, Hokanson included in his study several physiological measures. He reported on systolic blood pressure readings recorded at several critical points during the experiment: (1) after an adaptation period; (2) after the anxiety manipulation; (3) after frustration; (4) during aggression, and (5) after aggression. He believed that changes in systolic blood pressure between any

of these levels might provide informative correlates of aggressive behavior.

Among his major findings were: (a) that both the number of shocks and the pressure were found to be equally sensitive indicators of frustration-produced instigation to overt aggression; (b) that the High frustration condition served to increase the instigation to aggression; (c) that the High retaliatory anxiety condition served to increase the instigation to aggression; (d) that among combinations of High frustration and High retaliatory anxiety conditions, a significant negative correlation was found between systolic elevations (during frustration) and the increase in the instigation to aggression; and, finally, (e) that a negative correlation existed between vigor of aggression following frustration and post-aggression elevation in systolic blood pressure. The more aggressive the subjects were, the less elevated their blood pressure following the expression of aggression. This last finding interested Hokanson, and he explored this area further in the following studies.

Later, Hokanson and Shetler (1961) attempted to test directly the hypothesis that the expression of aggression, after a frustration, produces greater reduction in physiological arousal (systolic elevations) than having no opportunity to aggress. Hokanson believed that this was a more feasible question to test than the traditional question emanating from the catharsis hypothesis as to whether or not

the expression of aggression leads to a reduction in aggressive behavior. The central problem in the study of this catharsis question has been the inability of investigators (Berkovitz, 1956) to "demonstrate clearly that the decrease in [post-aggression] hostile behavior is due to drive reduction and not to response inhibition [p. 274]." Hokanson and Shetler addressed themselves to the first step of determining whether or not tension-reduction occurred. In their study, they also varied the status of the frustrator to assess any effects this may have upon tension-reduction.

Fifty-six undergraduate males were exposed to either high vs. low frustration by a high or low status experimenter with a subsequent opportunity vs. no opportunity to aggress physically (via electric shocks) towards the frustrator. Systolic blood pressure was measured before and after the frustration manipulation, and after the expression of aggression. The frustration manipulation was performed in exactly the same way as in the preceding study. Subjects were asked to count backwards from 100 to 1 by three's and differential treatment was given to high and low frustrated groups. Immediately following the frustration manipulation, half of the subjects were given an opportunity to aggress physically against the frustrator by administering shock to him. This situation was structured by telling the subject that the task involved an interpersonal guessing game. The subject was to think of a number between one and ten and the experimenter was to guess the number. If the experimenter guessed

incorrectly, the subject was to signal this error by administering shock to him. The experimenter was purported to be studying the effect of pain upon subsequent guessing. Subjects in the no opportunity to aggress condition went through the same procedure except that they signalled errors to the experimenter by flashing an electric light rather than using shock.

Among their findings were: (a) frustration led to significantly greater systolic increases than the Low frustration control condition with both High and Low status experimenter; (b) subjects frustrated by the Low status experimenter and given an opportunity to aggress against him manifested a return of blood pressure to pre-frustration levels which was not significantly different from that of non-frustrated subjects; whereas, (c) subjects frustrated by the Low status experimenter and given no opportunity to aggress against him manifested significantly greater systolic elevations at the conclusion of the experiment than either the frustrated-opportunity to aggress subjects or the Low frustrated subjects; (d) subjects frustrated by the High status experimenter manifested a return of blood pressure to pre-frustration levels which was not significantly different from those of non-frustrated subjects in both the opportunity to aggress and the no opportunity to aggress conditions. The authors discuss their results as offering support for the hypothesis that under certain conditions overt aggression has tension-reducing qualities.

In extending the work in this area, Hokanson and Burgess (1962a) systematically investigated the type of aggression. Systolic blood pressure and heart rate were measured before and after frustration and after each of three aggression conditions: physical, verbal, and fantasy. There was a no aggression control and a no frustration control. Eighty college age subjects were introduced to the experiment as one involving physiological responses to performance on intellectual tasks. To aid in establishing this deception, subjects were administered the Picture Completion subtest of the WAIS following an initial 8-minute adaptation period. During the second task, the frustration conditions were introduced. The counting technique, employed in the previous studies, was used again. Immediately following the frustration procedures, the aggression phase of the experiment took place. The 20 subjects in the Physical Aggression condition were instructed along the same lines as the previous study. They were informed that the task involved an interpersonal guessing problem. Electric shock was to be administered to the experimenter if he guessed incorrectly. The 20 subjects in the No Aggression condition went through exactly the same procedure but with the exception that a light and not shock signalled the incorrect guesses to the experimenter. The Verbal Aggression condition consisted of having the subject fill out a brief questionnaire evaluating the experimenter's capabilities as an experimenter, in the experimenter's presence. Finally, the 20 subjects in the

Fantasy Aggression condition were asked to create a story to Card 8EM of the TAT. Heart rate was measured continuously and systolic blood pressure at about 2-minute intervals over the entire procedure, with the critical measurements being before and after frustration and immediately after the opportunity to aggress.

Their results indicated: (a) that frustrated subjects who were given an opportunity to physically or verbally aggress against the frustrator manifested returns on both physiological measures to the levels of the Low frustration control subjects; (b) that frustrated subjects in the Fantasy and No Aggression conditions exhibited significantly elevated systolic pressures and heart rates at the post-aggression recording of these measures. The results were discussed by the researchers as offering support for the hypothesis that the expression of Physical or Verbal Aggression towards a frustrator tends to reduce general, physical arousal. They cautioned against concluding that their findings reflect a reduction in aggressive drive. They only found a reduction of tension and did not measure the effect this had upon subsequent aggression.

Hokanson and Burgess (1962b) investigated the frustration and status variables. Eighty-four college age subjects of both sexes were placed in one of three frustration conditions: ego threat, blocked goal, or no frustration. They were subsequently given either an opportunity to

verbally aggress (via a questionnaire) or no opportunity to aggress against the frustrator. A third orthogonal variable investigated was the status of the frustrator, with half of the subjects seen by an experimenter who introduced himself as a new faculty member (high status), while the remaining subjects were seen by a psychology student (low status). Systolic blood pressure and heart rate were measured before and after the frustration manipulation and immediately after the aggression phase of the experiment. Subjects in the Ego Threat frustration condition were asked to count backwards from 100 to 1 by two's as quickly as possible. Following a standardized procedure during this counting, the experimenter repeatedly interrupted and harassed the subject for counting too slowly, having the subject start over three times. After one minute, the experimenter asked that the counting be stopped, stating that the data could not be used owing to the subject's uncooperative attitude. The subjects in the Goal Blocking condition were also asked to count backwards from 100 to 1 by two's with the admonition that maximum effort and speed were important in this part of the experiment. The subjects were further instructed that since speed was so critical, this project had received funds with which to pay the subjects \$4.00 if they completed the counting within a specified time limit. At the completion of the counting, the subject was told that while he had finished within the time limit, it was the experimenter's impression that he had not devoted maximum effort to the task, and therefore he would not receive the \$4.00. The subjects

in the No frustration condition were allowed to count backwards to zero without interruption.

The results which were consistent on both physiological measures were: (a) both Ego Threat and Blocked Goal frustrations produced a significant increase in systolic blood pressure and heart rate relative to the No frustration control group; (b) for both types of frustration, having a post-frustration opportunity to verbally aggress against the Low status frustrator results in a return of vascular processes to levels not significantly different from those of a No frustration control group; whereas, having no opportunity to aggress with a Low status frustrator, results in maintenance of the frustration-produced elevations; (c) with a High status frustrator, opportunity to aggress, on the whole, did not substantially reduce vascular elevations relative to comparable opportunity to aggress with a Low status frustrator; (d) subjects who were in one of the frustration conditions or were seen by the High status experimenter had significantly elevated vascular processes at the close of the experiment when compared to subjects in the No frustration or Low status experimenter conditions. In this study, a comparison of the verbal aggression questionnaires between subjects frustrated by the High and Low experimenter indicated no significant difference in the amount of aggression expressed. Thus, differences in overt expression of aggression can be ruled out as a factor in the differential vascular reactions found in this research.

The purpose of Hokanson's (1963) next study with Burgess and Cohen was to test the hypothesis that displaced aggression also results in a degree of arousal reduction roughly proportional to the similarity of the substitute target to the original frustrator. A related hypothesis tested was that the intensity of the aggressive response will likewise be proportional to the similarity of the substitute target and frustrator.

Eighty college age subjects were placed in a 2 by 5 factorial design experiment involving High or Low frustration experience followed by an opportunity to physically aggress towards targets varying in similarity to the frustrator. Post-aggression systolic blood pressure elevation relative to pre-frustration base level was the primary dependent measure. Essentially the same procedure was carried out as in the preceding study for the adaptation period, the frustration manipulation, and the opportunity to aggress. The only exception was that the opportunity to aggress was divided into five groups: (1) no opportunity to aggress; (2) aggress against the frustrator; (3) aggress against the frustrator's assistant; (4) aggress against a psychology student; (5) aggress against an undergraduate student. Aside from the systolic measurements, a record was kept of the pressure exerted and the number of electric shocks given.

Their results indicated: (a) that among frustrated subjects, the expression of aggression directly to the

frustrator resulted in a significant degree of arousal reduction relative to a no aggression control; whereas, (b) the same amount of aggression expressed to substitute targets did not significantly reduce blood pressure. The authors believed that this raised a question concerning the generality of the traditional catharsis hypothesis; i.e., that the expression of aggression, in and of itself, is tension-reducing. They felt that this conclusion was underscored by these additional findings: among frustrated subjects, there was no significant difference between the amount of aggression they expressed regardless of the object; however, the arousal reduction took place only when the object of the aggression was the original frustrator. The authors conclude by stating that their results have implications for a theory of interpersonal aggressive behavior compatible with proposals by Berkowitz (1962). Following an anger provocation a general physiological arousal is produced, which most likely is associated with a behavioral disposition to aggressive behavior. When given an opportunity, the disposition to aggression will be completed against an available target; however, concomitant reduction of physiological arousal will take place only when the aggressive behavior in some way is perceived to affect the original frustrator and is deemed appropriate to the situation.

Hokanson continued to investigate the conditions under which this arousal and reduction phenomenon occurred. In a study with Edelman (1966), he changed the manner in

which frustration was manipulated and offered subjects not only an opportunity to aggress or not to aggress but also an opportunity to be friendly or to ignore the frustrator. He also looked at sex differences among subjects. The frustration manipulation was accomplished by having the subject receive several noxious shocks from a confederate posing as a fellow subject. The subject was allowed to (1) counter-aggress, (2) not to aggress, (3) reward the frustrator, or (4) ignore the frustrator. The results revealed that: (a) the noxious shocks by a fellow student produced systolic elevations; (b) that the counteraggression opportunity was followed by a rapid return of systolic elevations to pre-frustration levels; (c) friendly or counterresponses were followed by a relatively slow return to base line comparable to that of controls who were given no opportunity to respond; (d) that the above results were obtained with systolic blood pressure and a vasomotor response but not with diastolic blood pressure or heart rate, and (e) that these results were obtained on male subjects only. Females showed no differential recovery rates. Hokanson concludes his discussion by reviewing all the studies he has carried on so far and stating that there are a variety of circumstances under which the arousal and reduction phenomenon does not occur: with a High status frustrator (Hokanson and Burgess, 1962a); with displaced aggression towards a person unrelated to the frustrator (Hokanson et al., 1963); with fantasy aggression (Hokanson and Burgess, 1962b); and among college age females

(Hokanson and Edelman, 1966). He attempted to place these results under a learning theory framework. In each instance where the phenomenon did not occur, he believes it can be assumed that the subject had previously learned that under these particular social conditions an aggressive counter-response to a provocation was not an appropriate behavior. That is, aggression will not bring the interpersonal exchange to a rewarding conclusion and thus the elevated vascular processes are maintained. Similarly, he maintains that the subject has learned that, under certain other conditions, an aggressive response is instrumental in terminating noxious social stimulation, thereby also being associated with a relatively rapid reduction of autonomic processes. Hence, Hokanson believes that his series of studies has in effect been identifying the complex discriminative stimuli under which aggressive behaviors have or have not been reinforced in our culture.

As indirect evidence for his theorizing, he discussed an unpublished study in which fantasy aggression toward a High status frustrator produced the arousal reduction effect just as direct aggression toward a Low status frustrator produces it. He presumed that for those subjects direct aggression against a High status person had not proven to be reinforcing in the past, whereas covert aggression had. Similarly, fantasy aggression toward a Low status frustrator had not been as successful as direct verbal or physical

aggression. Hokanson believes the failure to obtain the arousal reduction effect with females in his study with Edelman (1966) is even more comprehensible. He claims that it is virtually a truism that middle class females in our culture receive little reward or training with respect to physical aggression; that is, it has not become instrumental in terminating noxious stimulation. Under these circumstances, it is not surprising to him that female subjects in his study, even when moderately reinforced to utilize an aggressive counterresponse, manifested no associated physiological relief.

Summary of Hokanson's work. In summarizing the work that Hokanson and his colleagues have performed, among his major findings are: (a) that experimentally produced frustration produces increases in systolic blood pressure; (b) that under certain conditions, opportunity for overt physical and verbal counteraggression towards the frustrator reduces systolic elevations to pre-frustration levels. The arousal and reduction phenomenon that they have repeatedly found strongly suggests that the frustration-aggression sequence has a tension-reduction effect that can be reliably measured. What they have not investigated is: (1) what effect this tension-reduction has upon subsequent aggression, and (2) whether or not a non-aggressive response to frustration exists that is equally effective as aggression in reducing tension.

Discussing frustration as a counterresponse to frustration. There is a trend that exists among some psychotherapists today that the clarification of and verbal expression of feelings assist their clients in obtaining relief from anxieties as well as in establishing an integrated self. This trend emanated primarily from the work of Carl Rogers and his associates. In his early work, Rogers (1965) established an elaborate personality theory as well as developed a psychotherapeutic approach often referred to as client-centered therapy. Briefly stated, in client-centered therapy, the therapist assumes a non-directive role and merely reflects back to his client any feelings or thoughts that he believes the client is trying to express. In this way, the therapist attempts to assist his clients to become more aware of their feelings and experiences which, according to Rogers, helps the clients to integrate themselves. Rogers (1957) writes of his new approach:

For the client, this optimal therapy has meant an exploration of increasingly strange and unknown and dangerous feelings in himself; . . . Thus, he becomes acquainted with elements of his experience which have in the past been denied or awareness as too threatening, too damaging to the structure of self. He finds himself experiencing these feelings fully, completely, in the relationship, so that for the moment he is his fear, or his anger, or his tenderness, or his strength. And as he lives these widely varied feelings, in all their degrees of intensity, he discovered that he has experienced himself, that he is all these feelings. He finds his behavior changing in constructive fashion in accordance with this newly experienced self [p. 487].

Not only does Rogers see value in expressing one's feelings, but he also suggests that once they are expressed, more constructive behavior may follow.

Walker, Rablen, and Rogers (1960) developed a scale to measure process changes in psychotherapy. One of their seven categories was the expression of feelings. They found that unrecognized and unexpressed feelings were identified with poor progress in therapy while feelings fully experienced and expressed were identified with excellent progress in therapy.

Additionally, Rogers' writings suggest that if feelings are not expressed a situation arises that is a basis for psychological tension. Rogers (1965) states: "Psychological maladjustments exist when the organism denies to awareness significant sensory and visceral experiences, which consequently are not symbolized and organized into the gestalt of the self-structure. When this situation exists, there is a basis or potential psychological tension [p. 476]." [This suggests that some type of tension might exist if an individual was frustrated and not able to express this frustration.] In the present study, both counter-aggression and the discussion of frustration are viewed as counterresponses to frustration that permit the feeling to be expressed and, consequently, relieve tension. On the other hand, having no opportunity to aggress or discuss the frustration creates a situation in which feelings could be

denied; hence, a condition of tension will persist. The overall implication for this study is that if feelings of frustration can be identified and verbally expressed, as they are in client-centered therapy, then perhaps this can lead to more constructive behavior in dealing with the frustration. This study investigates (1) whether or not discussion of frustration is an effective way of handling frustration; and (2) if it is effective, does this method lead to more constructive behavior which, in this case, is identified as a decrease in subsequent aggression.

Increase in subsequent aggressiveness. Some studies, cited earlier, suggest that subsequent aggression is increased rather than decreased after one engages in aggression. Berkowitz (1962) has suggested several situational conditions that could account for the increase in aggression. He believes that such conditions as social facilitation or permissiveness contribute in weakening one's inhibition to aggress against another person (i.e., Siegel, 1956). In addition to these situational conditions, Berkowitz believes that investigators have not always differentiated between counteraggression to frustration and an individual's habitual level of aggressiveness. Research guided by the Freudian energy model does not need to make such a distinction; they generally assume that every time a person acts aggressively, regardless of the circumstances, he does so because of his aggressive "energy" (Hartmann et al., 1949). Berkowitz

contends, however, that counteraggression to frustration must be differentiated from one's habitual level of aggressiveness. He maintains that aggressiveness is a learned habit and, like any other habit, is readily occasioned by relevant cues. The implication of such a formulation is obvious: "Providing an opportunity to express hostility may lessen the frustration-engendered instigation to aggression, but could also evoke and/or strengthen a person's habitual hostile tendencies [Berkowitz, 1962, p. 203]." The present study tests this statement. The design includes pre- and post-measures of an individual's aggressiveness. Interpolated between these measures are several conditions, one of which involves a frustration-counteraggression sequence. Following Berkowitz, it is predicted that following frustration-counteraggression, there will be a relative increase in subsequent aggressiveness.

Hypotheses

The first three hypotheses replicate Hokanson's major findings regarding frustration and aggression:

Hypothesis I: Frustration produces elevations in systolic blood pressure.

Hypothesis II: Following frustration, counteraggression against a frustrator produces a return of systolic elevations to pre-frustration levels; whereas,

Hypothesis III: Systolic elevations are maintained following frustration if there is no opportunity to aggress against the frustrator.

Based on clinical evidence adduced by Carl Rogers and his associates, the following two hypotheses seem tenable:

Hypothesis IV: Following frustration, having an opportunity to discuss the frustration produces a return of systolic elevation to pre-frustration levels.

Hypothesis V: Frustration-reduction achieved through the discussion of frustration results in no change in aggressiveness relative to base levels.

Following Berkowitz that a frustration-aggression sequence could result in an increase in one's level of habitual aggressiveness, the following hypothesis appears viable:

Hypothesis VI: Frustration-reduction achieved through the frustration-counteraggression sequence results in an increase in subsequent aggressiveness relative to base levels.

CHAPTER II

METHOD

Subjects

Seventy-four undergraduate students at the University of Florida selected from a pool of students taking an introductory or intermediate course in psychology served as subjects. The first two subjects had to be discarded since the electric stimulator was not properly set up during their trials. Students were fulfilling course requirements to participate in psychology experiments.

Equipment

- (1) Digit symbol subtest of the WAIS
- (2) Mercury sphygmomanometer and stethoscope to measure systolic blood pressure.
- (3) Hunter interval timer which measures duration of time in hundreds of a second.
- (4) Electric stimulator which had electrodes for receiving shock, a plunger for activating shock, and a dial for setting the intensity of shock at intervals of 1 to 10 milliamperes.

Experimental Design

Three independent variables were employed in the study:

(1) frustration vs. no frustration, (2) three counterresponses to frustration which were counteraggression, discussion of frustration, and having no opportunity to aggress, (3) three periods of systolic readings which were before and after frustration and after the counterresponse to frustration; and two periods of aggression measures which were pre- and post-experiment.

Two sets of data were the primary dependent variables: (1) systolic blood pressure readings taken at three critical periods--before and after frustration and after the counterresponse to frustration; (2) measures of aggression taken before and after the experimental procedures.

A three factor analysis of variance was used to test for differences in systolic blood pressure that may have occurred among the various experimental conditions. The experimental conditions generated the following design:

		(Repeated Measures) PERIODS OF SYSTOLIC BLOOD PRESSURE (SBP) READINGS			
	Responses to Frustration	Subjects	Base Level	Post-Frustration	Post-Responses to Frustration
Frustrated	Counter-aggression	12	"	"	"
	No Aggression	12	"	"	"
	Discussion	12	"	"	"
Not Frustrated	Counter-aggression	12	"	"	"
	No Aggression	12	"	"	"
	Discussion	12	"	"	"

N = 72

Another three factor analysis of variance was used to test for differences in aggression scores that may have occurred among the various experimental conditions. The experimental conditions generated the following design:

		(Repeated Measures) AGGRESSION SCORES	
	Responses to <u>Frustration</u>	<u>Subjects</u>	<u>Pre-Measure</u> <u>Post-Measure</u>
Frus- trated	Counter- aggression	12	" "
	No Aggression	12	" "
	Discussion	12	" "
<hr/>			
Not Frus- trated	Counter- aggression	12	" "
	No Aggression	12	" "
	Discussion	12	" "
<hr/>			
N = 72			

Following the two analyses, several one-tail t tests were performed to test the significance of the differences between certain cell means. In order to test hypotheses I and III, two individual t tests were made on two pairwise cell mean comparisons from the data in the first analysis. To test hypothesis VI, one t test was made on data from the second analysis. The justification for employing multiple t tests to test differences between cell means is based on the fact that these mean comparisons were planned in advance of the analyses and that they are orthogonal. Hypotheses II, IV,

and V did not require any statistical tests since the differences of the pairwise cell means in question were equal to less than zero.

In addition to the t tests that were employed to test the hypotheses, two Tukey post hoc comparisons were made on two additional pairwise cell mean comparisons.

Procedure

Six undergraduate students, similar in age and status to the subjects, served as experimental assistants and confederates.

The experiment was introduced to the subject as one involving blood pressure response to working on five routine intellectual tasks. The subject was led to believe that he would determine what five tasks he performed by selecting five sealed envelopes from approximately one hundred containing instructions for a variety of tasks. The selection of tasks for each subject was actually fixed so as to randomly assign subjects to one of six conditions: (1) frustrated-counteraggression; (2) frustrated-no opportunity to aggress; (3) frustrated-discussion; (4) not frustrated-counteraggression; (5) not frustrated-no opportunity to aggress; and (6) not frustrated-discussion.

Techniques employed for obtaining dependent measures. The techniques for taking and recording the blood pressure measures as well as the aggression scores were standard for all subjects. The blood pressure readings

were made in the following manner: upon entering the experimental room, the assistant placed the cuff on the left arm of the subject and it remained there throughout the session. Whenever a reading was required, the assistant inflated the cuff cutting off the flow of blood in the arm momentarily. The stethoscope was then placed over the vein directly below the inflated cuff. As the cuff was deflated, the pressure required to force the blood flow back through the arm registered on the mercury sphygmomanometer. The point at which the blood flow returns is heard as a throb through the stethoscope and is designated as the systolic blood pressure. Several readings were taken during the session by the assistant with critical measures before and after frustration and after the opportunity to respond to the frustration.

The aggression scores were recorded in the following manner: the subject selected a shock intensity from one to ten milliamperes by setting the dial on the electric stimulator. Once the subject set the dial, he depressed the plunger to administer the shock. The plunger activated a Hunter interval timer which measured the duration of shock in hundreds of a second. The assistant recorded both the intensity and duration of the shock that the subject administered. The mean score of the intensity x duration of the shocks that were administered was taken as pre- and post-measures of the subject's aggressiveness. The rationale for using this measure of aggression is discussed by

Bandura (1964). He discusses a study which used both (1) intensity alone, and (2) intensity x duration as measures of aggression. Under certain conditions, it was found that although the subjects administered virtually identical intensities of shock, the subjects differed significantly on the intensity x duration indicator of aggression.

Adaptation period. All subjects selected for their first task the Digit Symbol subtest of the WAIS. Subjects were allowed to perform this task at their own pace. The purpose of this task was to allow a five-minute acclimation period to the experimental setting.

Pre-measure of aggression. Following the adaptation period, all subjects selected for their second task an interpersonal guessing game. The task was structured as follows: subjects were told that this task involved an interpersonal guessing situation in which the subject was to think of a number between one and ten, following which another person was to guess the number. The subject was told that the experimenter was studying the effect of pain on subsequent guessing. For the pre-measure of aggression, the person guessing was a confederate posing as a fellow subject. If the confederate's guess was wrong, the subject was to signal this error by administering electric shock to him. Although the person was wired to an elaborate shock apparatus, he did not actually receive shock, but merely behaved as if he did. If the confederate was correct, no shock was administered.

The subject was led to believe that there would be about 15 guessing trials, but the experimental assistant actually terminated the trials when the subject had administered ten shocks to the confederate. The confederate was allowed to guess two correct, therefore, 12 trials in all were run. The subject was not informed of the nature of milliamperes; however, the dial on the stimulator was clearly calibrated and labeled in milliamperes. The subject was informed that he was free to vary the intensity of the shock from one to ten, with one being the least noxious and ten being the most noxious. The subject was further instructed on how to administer the shock. The mean score of the intensity x duration of the ten shocks that he administered to the confederate was taken as the pre-measure of the subject's aggressiveness.

Frustration manipulation. Following the pre-measure of aggression, all subjects selected for their third task a counting situation which required them to count backwards from 100 to 1 by three's as quickly as possible. Frustration was induced in one half of the subjects by a standardized procedure of having the experimental assistant interrupt, harass, and not allow them to complete the task. The No Frustration condition was established by allowing the remaining half of the subjects to complete the counting without interruption and at their own pace.

Following the frustration manipulation, the subjects were assigned in one of three counterresponse conditions:

1. Counteraggression. Twenty-four subjects selected for their fourth task the same interpersonal guessing situation described in the pre-measure of aggression condition. The identical procedure was carried out with the exception that the person guessing the numbers and receiving shock was the experimental assistant (frustrator).

2. No opportunity to aggress. Twenty-four subjects selected for their fourth task the same interpersonal guessing situation described in the pre-measure of aggression condition. The identical procedure was carried out with two exceptions. The person guessing the numbers was the experimental assistant (frustrator) and errors were signalled verbally rather than by using shock.

3. Discussion. Twenty-four subjects selected for their fourth task a discussion situation which required that they discuss the experiment for five minutes with the experimenter. The discussion was tape-recorded and the experimental assistant (frustrator) was not present. The experimenter attempted by means of an unstructured interview to get subjects to identify and express any feelings that they had towards the experimental assistant (frustrator). The subjects were not allowed to evaluate or derogate the experimental assistant in any way. The experimenter was a trained doctoral student in clinical psychology. The experimenter ran the subjects blind in this condition. Even though feelings were emphasized, some subjects did mention that they were not permitted to finish the counting task.

Post-measure of aggression. Following the response to frustration conditions, all subjects selected for their fifth and final task the same interpersonal guessing game described above in the pre-measure of aggression condition. The identical procedure was carried out with the confederate posing as a fellow subject guessing the numbers and receiving shock for incorrect guesses. The experimental assistant recorded the intensity and duration of each of the ten shocks that were administered. The mean score of the intensity \times the duration of the ten shocks was taken as the post-measure of the subject's aggressiveness.

Questionnaire and debriefing. Following the experimental procedure, all subjects were asked to fill out two five-point scales to determine their level of guilt and anxiety over administering shock to another person. On each scale, point one indicates high guilt and anxiety, and point five indicates no guilt or anxiety. Copies of these scales are in the appendix.

Before leaving the session, all subjects were debriefed.

CHAPTER III

RESULTS

Initial Comparability

The hypotheses under test in this study are based on changes in both systolic blood pressure and measures of aggression as a result of the experimental manipulations. Hence, it must be determined if the groups did or did not differ significantly on base level systolic blood pressure and on the pre-measure of aggression. In Table 1, the means and standard deviations for the base level systolic blood pressure for the experimental groups are listed. By inspection, results reveal that very little difference exists among the groups on base level systolic blood pressure.

Blood pressure readings in the sample ranged from about a low of 105 to a high of 147. Average blood pressure for most people is approximately 120 which is also the grand mean of this sample.

In Table 2 are the means and standard deviations of aggression scores used as a pre-measure of aggression. By inspection, results reveal very little difference among the groups on the pre-measure of aggression. The pre-measure of aggression scores ranged from .07 to 5.82.

TABLE 1
Means and Standard Deviations of Base Level
Systolic Blood Pressure

	Counteraggression	No Aggression	Discussion
Frustrated	$\bar{X} = 119$	$\bar{X} = 120$	$\bar{X} = 119$
	$s = 6.3$	$s = 11.6$	$s = 11.0$
Not Frustrated	$\bar{X} = 120$	$\bar{X} = 122$	$\bar{X} = 121$
	$s = 6.0$	$s = 8.2$	$s = 9.8$

TABLE 2
Means and Standard Deviations of Aggression Scores
Used as a Pre-measure of Aggression

	Counteraggression	No Aggression	Discussion
Frustrated	$\bar{X} = 1.33$	$\bar{X} = 1.14$	$\bar{X} = 1.56$
	$s = .84$	$s = 1.02$	$s = 1.16$
Not Frustrated	$\bar{X} = 1.36$	$\bar{X} = 1.58$	$\bar{X} = 1.33$
	$s = .68$	$s = 1.15$	$s = .75$

Analyses of Blood Pressure Measures

In Table 3, the mean levels of systolic blood pressure for each group are shown.

The summary table for the three-way analysis of variance with repeated measures that assessed changes in systolic pressure is in Table 4.

In Figure 1, the interaction effect obtained for the Frustration x Systolic Blood Pressure readings (SBP) is presented graphically. Inspection of the graph reveals that the non-frustrated group changed very little over the three periods of systolic readings. On the other hand, the frustrated group showed a sharp increase following frustration and a return to pre-frustration or base level following the response to frustration.

In Figure 2, the interaction effect obtained for the Response to Frustration x Systolic Blood Pressure readings (SBP) is depicted graphically. Inspection of the graph reveals that both the counteraggression and discussion groups followed the same sequence over the three periods of blood pressure readings. Both groups showed a significant increase following frustration and a return to base level following the response to frustration. On the other hand, the group having no opportunity to aggress showed an increase following frustration, but this increase did not return to base level following the response to frustration. This group maintained systolic elevations.

TABLE 3

Means of Systolic Blood Pressure Within All
Groups and Conditions

		Base Level	Post- Frustration	Post- Response
Frustrated	Counter- aggression	119	128	118
	No Aggression	120	129	127
	Discussion	119	129	118
Not Frustrated	Counter- aggression	120	120	119
	No Aggression	122	120	121
	Discussion	121	121	120
		$\bar{X} = 121$	$\bar{X} = 125$	$\bar{X} = 121$

TABLE 4

Summary Table for the Analysis of Variance:
Systolic Blood Pressure

Source	df	Ms	F
Frustration	1	322.57	1.24
Response to Frustration	2	121.48	.47
Systolic blood pressure readings (SBP)	2	432.92	23.29**
Frustration x Response to Frustration	2	43.04	.16
Frustration x SBP	2	483.76	26.58**
Response to Frustration x SEP	4	55.71	3.06*
Frustration x Response to Frustration x SBP	4	38.28	2.10
Subs. w/groups	66	259.24	
SBP x Subs. w/groups	132	18.20	
* $p < 0.05$			
** $p < 0.01$			

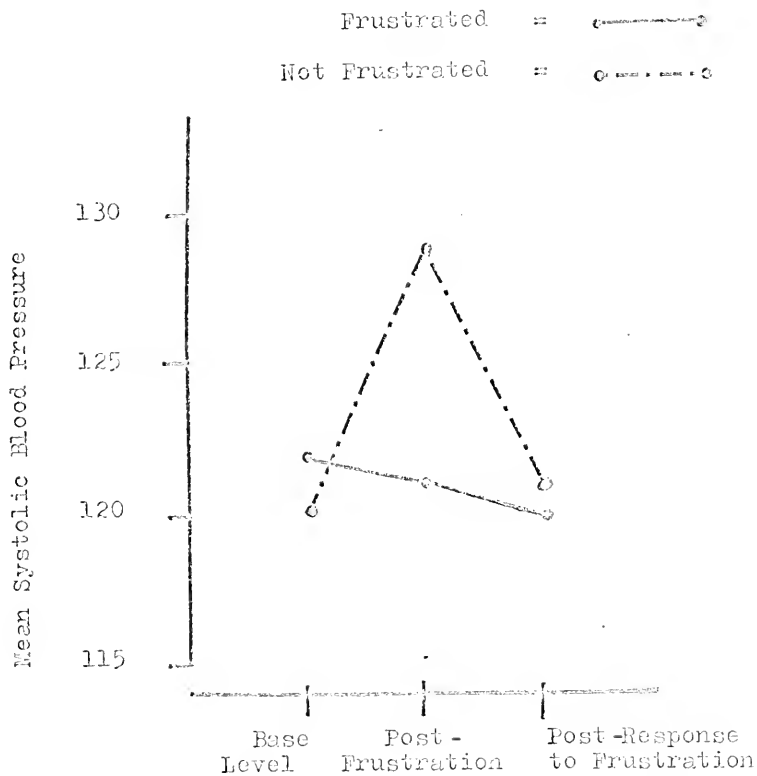


Figure 1. Mean Systolic Blood Pressures at Three Readings at Each Level of Frustration

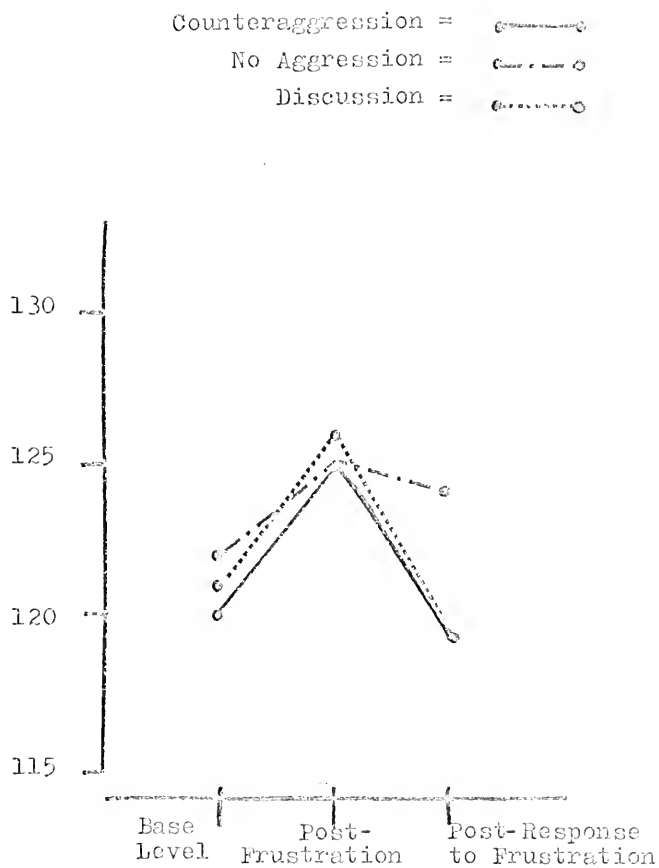


Figure 2. Mean Systolic Blood Pressures at Three Readings at Each Level of Response to Frustration

In order to test hypotheses I and III, t tests were employed to make two pairwise cell mean comparisons on the data shown in Table 3.

Hypothesis I states that frustration produces elevations in systolic blood pressure. The t ratio for the comparison of the post-frustration mean ($\bar{X} = 125$) and of the base level mean ($\bar{X} = 121$) was 5.63. This ratio is significant beyond the 0.01 level ($df = 132$) indicating there was an increase in systolic blood pressure from the base level to the post-frustration measure of systolic blood pressure. Hypothesis I is, therefore, confirmed.

Hypothesis II proposed that following frustration counteraggression against a frustrator produces a return of systolic elevations to pre-frustration levels. The difference between (1) the frustrated-counteraggression-post-treatment cell ($\bar{X} = 118$) and (2) the frustrated-counteraggression-base level cell ($\bar{X} = 119$) was less than zero; therefore, no statistical test was required. This finding is consistent with the proposal that no changes remained in systolic blood pressure following counteraggression relative to the base level.

Hypothesis III proposed that systolic elevations are maintained following frustration if there is no opportunity to aggress against the frustrator. The t ratio that was obtained when the means of the frustrated-no aggression-post-response cell ($\bar{X} = 127$) and the frustrated-no aggression-

base level cell ($\bar{X} = 120$) were compared was 4.04. This ratio was significant beyond the 0.01 level ($df = 132$) and indicates that among frustrated subjects having no opportunity to counteraggress, systolic elevations remained at the post-response measure relative to the base level measures. Hypothesis III, therefore, is confirmed.

Hypothesis IV proposed that following frustration having an opportunity to discuss the frustration produces a return of systolic elevations to pre-frustration levels. The difference between (1) the frustrated-discussion-post-treatment cell ($\bar{X} = 118$) and (2) the frustrated-discussion-base level cell ($\bar{X} = 119$) was less than zero; therefore, no statistical test was required. This finding is consistent with the proposal that no changes in systolic blood pressure remained following discussion relative to the base level.

Analyses of Aggression Scores

In Table 5, the cell means for aggression scores for all groups are shown.

The summary of the three-way analysis of variance with repeated measures used to test for changes in aggression scores is shown in Table 6.

In Figure 3, the interaction effect that was obtained for the Response to Frustration x Periods of Aggression measure conditions for each level of Frustration is presented graphically. Inspection of the graph indicates that among

TABLE 5
Means for Aggression Scores for All Groups

		Pre-measure	Post-measure
Frustrated	Counter- aggression	1.33	3.51
	No Aggression	1.14	2.81
	Discussion	1.50	1.20
Not Frustrated	Counter- aggression	1.36	2.19
	No Aggression	1.59	1.51
	Discussion	1.33	1.33

TABLE 6

Summary Table for Analysis of Variance:
Aggression Scores

Source	df	MS	F
Frustration	1	5.03	1.64
Response to Frustration	2	6.61	2.16
Periods of Aggression measure	1	17.99	20.69**
Frustration x Response to Frustration	2	1.09	.36
Frustration x Periods of Aggression measure	1	7.34	8.44**
Response to Frustration x Periods of Aggression measure	2	8.64	9.93**
Frustration x Response to Frustration x Periods of Frustration measure	2	3.77	4.33*
Sub. w/groups	66	3.06	
Periods of Aggression measure x Subs. w/groups	66	.87	

* $p < 0.025$

** $p < 0.01$

Counteraggression—

No Aggression—

Discussion—

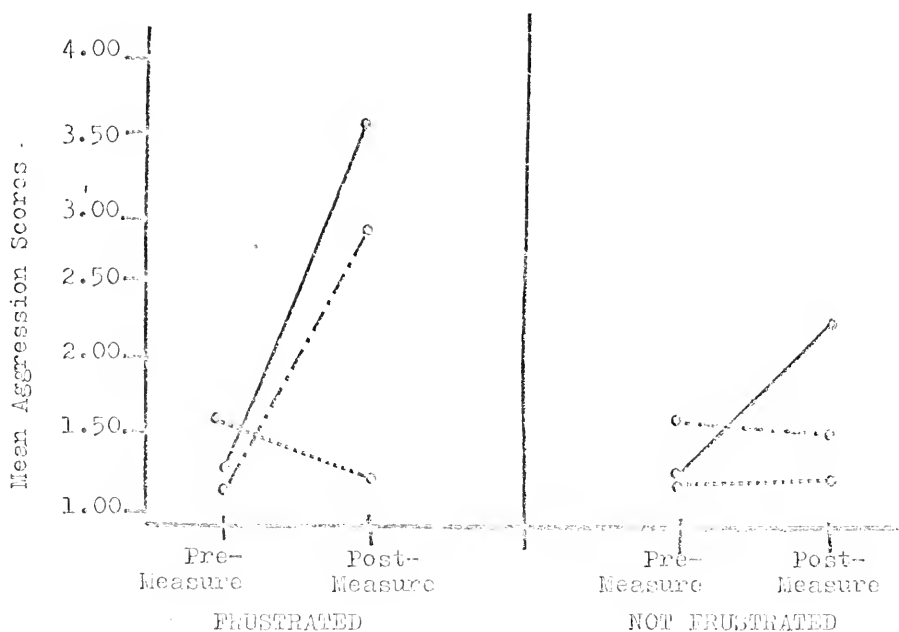


Figure 3. Mean Aggression Scores for All Responses to Frustration on Both Pre- and Post-measure for Both Levels of Frustration

frustrated subjects, both the counteraggression and the no aggression groups showed increases in the post-measure of aggression relative to their pre-measure. Confirmation of hypothesis VI, shown below, indicates that the increase for the counteraggression group was significant; however, a Tukey post hoc comparison was made on the No aggression group, and the q ratio obtained (2.00) was not significant. The discussion group among frustrated subjects showed little or no change between pre- and post-measures of aggression. Among the non-frustrated subjects, the graph indicates that the only group to show an increase in the post-measure of aggression is the counteraggression group. A Tukey post hoc comparison made on the no frustration-counteraggression group was not significant (q = 1.00).

Hypothesis V states that frustration reduction achieved through the discussion of frustration results in no change in aggression relative to base level. The difference between (1) the frustrated-discussion-post-measure cell (\bar{X} = 1.20) and (2) the frustrated-discussion-pre-measure cell (\bar{X} = 1.53) was less than zero, therefore, no statistical test was required. This finding is consistent with the proposal that no changes took place between pre-measure and post-measure of the aggression for the discussion group.

Hypothesis VI proposed that frustration reduction achieved through the frustration-counteraggression sequence results in an increase in subsequent aggression relative to

base levels. The t ratio that was obtained when the means of the frustrated-counteraggression-post-measure cell ($\bar{X} = 3.51$) and the frustrated-counteraggression-pre-measure cell ($\bar{X} = 1.33$) were compared was 6.23. This ratio was significant beyond the 0.01 level ($df = 66$) and indicates that a significant increase occurred between the pre-measure and post-measure of aggression for frustrated subjects who were allowed to counteraggress against the frustrator. This supports hypothesis VI.

Questionnaire Results

Ninety-eight percent of the subjects checked either four or five on the five-point scale on both the guilt and anxiety measures. This means that the subjects, on the whole, reported little or no guilt or anxiety resulting from administering shock to another person.

CHAPTER IV

DISCUSSION

Replication of Hokanson's Findings

The confirmation of hypotheses I, II and III replicates the major findings of Hokanson and his colleagues regarding the arousal and reduction phenomenon of the frustration-aggression sequence. That is, experimentally produced frustration causes systolic elevations and being able to counteraggress against the frustrator under certain circumstances almost guarantees a return of the elevations to pre-frustration levels. Post-frustration counteraggression was found to be tension-reducing. Hokanson's results concerning frustrated subjects who are not permitted to counteraggress were also replicated. Subjects in the no opportunity to aggress group maintained their systolic elevations.

Discussion as a Response to Frustration

[Confirmation of hypothesis IV allows us to conclude that the discussion of frustration is an effective non-aggressive method for relieving frustration-produced tensions.] Discussion of frustration was as effective as counteraggression in reducing frustration-produced systolic elevations. Post-frustration tension-reduction, therefore, need not be directly related to inflicting injury

(Berkowitz, 1962) or merely having the opportunity to aggress (Hokanson, 1961). Tension relief may simply be related to the acknowledgment of the feeling by the individual rather than upon the necessity of inflicting pain to the frustrator.

If future research should reveal that the relief from frustration can consistently be obtained by becoming aware of our frustrations and acknowledging them, this method would no doubt be an efficient and socially acceptable way of dealing with frustration. Presumably, both sexes and not only males would have access to this mode of response and, furthermore, this mode of response does not require the physical presence of the frustrator.

Effects on Subsequent Aggressiveness

Confirmation of hypothesis VI indicates that although there is tension-reduction following the frustration-counter-aggression sequence, the overall effect upon aggressiveness is to increase it. This is in accord with what Berkowitz (1962) proposes that frustration-aggression could result in an increase in one's level of habitual aggressiveness. This finding could account for the findings in so many of the classic studies in this area in which subsequent aggression was increased rather than decreased. More important, however, confirmation of hypothesis V indicates that the [discussion of frustration is an efficient non-aggressive means for dealing with frustration. It not only achieves tension-reduction, but it also produces no increase in subsequent aggressiveness.]

The efficacy of a discussion response to frustration in reducing tension is compatible with the theory presented by Berkowitz (1962) and elaborated by Hokanson (1966).

Berkowitz maintains that frustration produces general, physiological arousal. This arousal predisposes us to aggressive behavior. Further, there is a tendency to complete an aggression sequence and, therefore, if permitted, aggression will occur against an available target. Hokanson elaborates this by stating that the aggression will be tension-reducing only if it is perceived to affect the frustrator and only if it has been learned in the past that it is an appropriate response to make.

What is refreshing about Berkowitz' view is that it offers various stages at which aggression may be interrupted and possibly prevented. This is in contrast to the traditional Freudian model (Freud, 1959) which argues that within each individual there is a reservoir of aggressive energy that must be discharged; hence, aggression cannot be prevented. The present results suggest that placing a discussion of frustration at an early stage in the frustration-aggression sequence reduces the likelihood of subsequent aggressive behavior. In other words, [aggression does not have to be expressed in order to relieve frustration. Discussion of frustration may help the individual re-evaluate the frustrating experience and permit him to adopt another behavioral disposition to the situation.]

One of the main contributions that Hokanson's (1966) study makes to the present finding concerning the discussion of frustration is his attempt to include his results within a learning theory framework. As reviewed earlier, Hokanson believes that people learn appropriate techniques with which to obtain relief from frustration. If Hokanson is correct, then it can be assumed that individuals can learn to use the discussion of frustration in dealing with frustration. Recently, Stone and Hokanson (1969) found that subjects can learn to be self-punitive rather than to aggress against the frustrator. The self-punitive behavior produced arousal reduction for these subjects. Clearly, if discussions are efficacious in reducing frustration and if one can learn to use this technique, then an effective method for decreasing the tendency for aggressive behavior towards self and others has been located.

Alternative Hypotheses

One way in which the efficacy of the discussion might be explained is to consider this condition in terms of verbal aggression. Certainly, Hokanson and Burgess (1962) have shown that verbal aggression is as effective as overt, physical aggression in reducing frustration-produced tensions. However, this alternative hypothesis is untenable because the subjects in the discussion group were never allowed to evaluate the frustrator in a negative manner. The discussion involved feelings that the subjects

may have had towards the frustrator, such as resentment, or disgust, or anger. The subjects were not permitted to evaluate or derogate the frustrator in any way.

Another interesting alternative hypothesis that may be offered to explain the increase in aggression scores concerns the report that most of the subjects gave concerning their level of guilt and anxiety over administering shock. One of the most prominent explanations of catharsis is that guilt and not tension-reduction reduces subsequent aggression (Berkowitz, 1962). Guilt and/or anxiety over our aggressive behavior inhibits our aggressing further. If the questionnaires concerning guilt and anxiety are accurate, then the subjects in this study were biased in this respect. There was no guilt or anxiety and, therefore, there was no inhibition to aggress. In order to determine whether or not the present findings are related to low guilt and anxiety, future research should take this into account. In a very recent study, Gasbaro and Rabin (1969) considered guilt to be an important factor in aggressive behavior. Based on this interpretation of catharsis, it is possible to explain that the increase in aggression for the counteraggression groups was a result of low guilt and anxiety rather than tension-reduction or a practice effect.

A type of practice effect offers yet another alternative explanation for the increase in aggression for the counteraggression groups. In Figure 3, it can be noted that

the non-frustrated and frustrated counteraggression groups showed an increase between the pre-measure and post-measure of aggression. What could account for the increase in aggressiveness? Both counteraggression groups (frustrated and non-frustrated) experienced at least 20 trials of administering shock before the post-measure of aggression was taken. All other groups received only ten trials before the post-measure was taken. It may be that the increase in aggression that was found with both counteraggression groups is due simply to engaging in more aggression and not to tension-reduction as originally postulated. Before a more definite statement can be made concerning the overall effect of arousal reduction upon subsequent aggressiveness, the practice effect has to be controlled.

One final but important way in looking at the efficacy of the discussion group in reducing subsequent aggressiveness is to consider it in terms of a social learning theory proposed by Bandura (1964). Bandura maintains that if a frustrated person should become immersed in new activities that supersede the preoccupying, brooding frustrating event, a noticeable degree of tension-reduction will take place and no aggression will follow. Bandura attributes this reduction of aggression to attentional shifts or stimulus change rather than to energy discharge. He believes that subjects would experience equally salutary effects from getting involved in an absorbing book, a movie, or a stage

play containing few or no aggressive stimuli. It is difficult to say whether this alternative hypothesis applies to the present study since the discussion group did not actually shift attention to other matters nor did they really remove themselves from the frustrating event. Rather, the discussion focused on the frustration as such. One way to determine the effects of attentional shifts is to include an additional discussion condition in which subjects are actually required to get involved in discussion on topics irrelevant to the frustrating event.

Limitations

Certain limitations exist in the present study that prevent concluding positively that the discussion of frustration produced tension-reduction from frustration. Since no group was included that was allowed to discuss a frustration irrelevant topic, it is difficult to pinpoint the effect of a discussion as such. Another study should investigate this condition in more detail taking into consideration both verbal aggression as well as attentional shift as mechanisms of tension-reduction.

The results of this study appear to contradict the catharsis hypothesis (Dollard et al., 1939) which predicts a reduction of aggression following aggressive behavior. Even though the results show an increase in subsequent aggressiveness for several groups, that about the possibility that aggression may have been momentarily reduced during

the counteraggression? For example, during the post-frustration counteraggression, the subject was allowed ten trials in which to shock the frustrator. A test to determine whether or not aggression was momentarily reduced would be to look at the difference between the first five trials and the last five trials. Unfortunately, no data were collected during the counteraggression trials. The only statement that would be safe to make is that following the frustration-aggression sequence, aggression may be momentarily reduced but the overall effect is an increase in subsequent aggressiveness. Another limitation is that the post-measure of aggression was taken approximately twenty minutes after the experimental conditions. Future research should investigate whether or not increases or decreases of aggressiveness are maintained over a longer period of time.

One final but important limitation of this study is that subsequent aggression towards the actual frustrator was not tested. The shock that subjects administered during the post-measure of aggression was always towards the confederate and not the frustrator. There is no way of knowing if these subjects would become more aggressive had the original frustrator been available for shock during the post-measure. It can only be assumed that the confederate that was used was similar to the frustrator and would have been an appropriate target for the displaced aggression. This assumption certainly obtains support from the frustrated-no

aggression group when they showed a substantial increase in aggressiveness from pre-measure to post-measure. Not having an opportunity to aggress against the frustrator, this group displaced their aggression on the confederate on the post-measure. This is similar to what Hokanson and his colleagues found (1963) when they investigated displaced aggression.

CHAPTER V

SUMMARY

The arousal and reduction phenomenon of the frustration-aggression sequence that Holmson has consistently found in his work has been replicated in this present study. It was found that frustration produced significant elevations in systolic blood pressure and having the opportunity to counteraggress against the frustrator reduced these elevations. Those who were frustrated and not allowed to aggress maintained systolic elevations. In addition to this replication, a discussion of frustration response was permitted, and it was found to be equally effective in reducing arousal from frustration.

Even though the counteraggression and discussion responses were found to be similarly effective in reducing frustration-produced tensions, they differed significantly in their effects upon subsequent aggressiveness. [Counteraggression was shown to increase subsequent aggression while the discussion of frustration produced no changes in aggression.] The discussion of frustration was viewed as an efficient non-aggressive method for dealing with frustration especially if one was interested in decreasing the potential for aggression.

Several alternative hypotheses were discussed. A possibility exists that the efficiency of the discussion condition could be attributed to (1) verbal aggression, or (2) attentional shifts or stimulus change. Due to the nature of the discussion condition in this study, these hypotheses do not seem tenable, but they should be investigated in future research.

Two alternative explanations were offered to account for the increase in aggression for both counteraggression groups. One of these involved a practice effect since both counteraggression groups engaged in ten more trials of administering shock than any other group. The other explanation was related to the fact that low guilt and anxiety over administering shock to another person were reported by the majority of subjects. According to Berkowitz (1962), guilt inhibits our aggressing further. Since these subjects had little guilt, they could have had little inhibition to aggress.

Certain limitations of the study were also discussed. One involved the inability to determine what it was about the discussion condition that made it effective. Another involved the short duration of time in which the post-measure of aggression was taken. The most important, however, involved the fact that subsequent aggression towards the actual frustrator in the discussion groups was not tested. In the post-measure, shock was administered to a confederate and

not the actual frustrator. The assumption was made that the confederate was an appropriate target for displaced aggression for this group if they had wished to aggress.

The alternative interpretations as well as the limitations that were discussed offer a direction for future research in this area.

APPENDICES

APPENDIX A

FIVE-POINT SCALE - ANXIETY

The FIRST TIME I shocked someone, I felt: (CIRCLE ONE NUMBER)

1	2	3	4	5
Very Anxious				No Anxiety

The SECOND TIME I shocked someone, I felt: (CIRCLE ONE NUMBER)

1	2	3	4	5
Very Anxious				No Anxiety

The THIRD TIME I shocked someone, I felt: (CIRCLE ONE NUMBER)

1	2	3	4	5
Very Anxious				No Anxiety

APPENDIX B

FIVE-POINT SCALE - GUILT

The FIRST TIME I shocked someone, I felt: (CIRCLE ONE NUMBER)

1	2	3	4	5
Very Guilty				No Guilt

The SECOND TIME I shocked someone, I felt: (CIRCLE ONE NUMBER)

1	2	3	4	5
Very Guilty				No Guilt

The THIRD TIME I shocked someone, I felt: (CIRCLE ONE NUMBER)

1	2	3	4	5
Very Guilty				No Guilt

REFERENCES

- Baker, John. The effects of four types of aggression on physiological and psychological arousal. Doctoral dissertation, West Virginia University, 1967.
- Baker, John. Effects of aggressing "alone" or "with another" on physiological and psychological arousal. J. pers. soc. psychology, 1969, 12, 80-86.
- Bandura, A., and Huston, Aletha C. Identification as a process of incidental learning. J. abnorm. soc. Psychol., 1961, 63, 311-318.
- Bandura, A.; Ross, Dorothea; and Ross, Sheila A. Imitation of film-mediated aggressive models. J. abnorm. soc. Psychol., 1963, 66, 3-11.
- Bandura, A. Vicarious one trial learning. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, II. New York: Academic Press, 1964.
- Berkowitz, L. The expression and reduction of hostility. Psychol. Bull., 1958, 55, 257-283.
- Berkowitz, L. Aggression: A Social Psychological Analysis. New York: McGraw-Hill, 1962.
- Dollard, J.; Doob, L.; Miller, N.; Mowrer, O.; and Sears, R. Frustration and Aggression. New Haven: Yale, 1939.
- Feshbach, S. The drive-reducing function of fantasy behavior. J. abnorm. soc. Psychol., 1955, 50, 3-11.
- Feshbach, S. The stimulating versus cathartic effects of a vicarious aggressive activity. J. abnorm. soc. Psychol., 1961, 63, 331-385.
- Feshbach, S. The function of aggression and the regulation of aggressive drive. Psychol. Rev., 1965, 71, 257-272.

- Garbaro, S., and Rabin A. Diastolic blood pressure responses following direct and displaced aggression after anger arousal in high- and low-guilt subjects. J. pers. soc. Psychol., 1969, 12, 87-94.
- Freud, S. Why war? letter to Professor Einstein. In J. Strachey (Ed.) Collected papers of Sigmund Freud. Vol. 5, New York: Basic Books, 1959.
- Hartmann, H.; Kris, E.; and Loewenstein, R. L. Notes on therapy of aggression. Psychoanalytic Study of the Child, 1949. Vols. 3-4. New York: International Universities Press, 1949.
- Hokanson, J. The effects of frustration and anxiety on overt aggression. J. abnorm. soc. Psychol., 1961, 62, 346-351.
- Hokanson, J., and Shetler, S. The effect of overt aggression on physiological tension level. J. abnorm. soc. Psychol., 1961, 63, 446-448.
- Hokanson, J., and Burgess, M. The effects of status, type of frustration, and aggression on vascular process. J. abnorm. soc. Psychol., 1962a, 65, 232-237.
- Hokanson, J., and Burgess, M. The effects of three types of aggression on vascular processes. J. abnorm. soc. Psychol., 1962b, 64, 446-449.
- Hokanson, J.; Burges, M.; and Cohen, M. Effects of displaced aggression on systolic blood pressure. J. abnorm. soc. Psychol., 1963, 67, 214-216.
- Hokanson, J., and Edelman, E. The effects of three social responses on vascular processes. J. per. soc. Psychol., 1966, 3, 442-444.
- Kahn, M. A polygraph study of the catharsis of aggression. Doctoral dissertation, Harvard University, 1960.
- Kahr, M. The physiology of catharsis. J. per. soc. Psychol., 1966, 3, 276-286.
- Kenny, D. An experimental test of the Catharsis theory of aggression. Doctoral dissertation, University of Washington, 1953.

- Lüvaas, O. Effects of exposure to symbolic aggression on aggressive behavior. Child. Dev., 1961, 32, 37-44.
- Mussen, P., and Rutherford, E. Effects of aggressive cartoons on children's aggressive play. J. abnorm. soc. Psychol., 1961, 42, 461-465.
- Pepitone, A., and Reichling, G. Group cohesiveness and the expression of hostility. Hum. Relat., 1955, 8, 327-337.
- Rogers, C. R. The phenomenological theory of personality. In W. S. Sahakian (Ed.), Psychology of Personality: Readings in Theory. Chicago, Ill.: Rand McNally, 1965, pp. 473-493.
- Rogers, C. R. Rogers' self theory. In C. W. Hall and G. Lindzey (Eds.), Theories of Personality. New York: John Wiley, 1957, pp. 476-501.
- Rosenbaum, M., and deCharms, R. Direct and vicarious reduction to hostility. J. abnorm. soc. Psychol., 1960, 40, 105-111.
- Siegel, Alberta E. Film-mediated fantasy aggression and strength of aggressive drive. Child Dev., 1956, 27, 365-378.
- Stone, L., and Hokanson, J. Arousal reduction via self-punitive behavior. J. pers. soc. Psychol., 1969, 12, 72-79.
- Thibaut, J. An experimental study of cohesiveness of underprivileged groups. Hum. Relat., 1950, 3, 251-278.
- Thibaut, J., and Coules, J. The role of communication in the reduction of interpersonal hostility. J. abnorm. soc. Psychol., 1952, 47, 770-777.
- Walker, A. M.; Rablen, R. A.; and Rogers, C. R. Development of a scale to measure process changes in psychotherapy. J. of clinical psychology, 1960, 16 (1).
- Worchel, P. Catharsis and the relief of hostility. J. abnorm. soc. Psychol., 1957, 55, 238-243.

BIOGRAPHICAL SKETCH

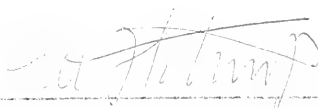
Anastasia E. Wells was born on January 20, 1933, in New York, New York. She was graduated from Cathedral High School, New York, New York, in June, 1950, and was subsequently employed in private industry for several years. In February, 1957, she enrolled in Hunter College of the City University of New York. After eight years of evening session work, she received her Bachelor of Arts degree cum laude in June, 1965, with honors in both economics and psychology. During her junior year at Hunter College, she was elected to Phi Beta Kappa and Psi Chi.

In September, 1966, she enrolled in the Graduate School of the University of Florida, and in June, 1968, she was awarded her Master of Arts degree. She is currently fulfilling the requirements for her Ph.D. degree. During her graduate studies at the University of Florida, she was a U.S.P.H. Fellow for one year and a Veterans Administration trainee for two and a half years. She also served a one year's internship in clinical psychology at the J. Hillis Miller Medical Center. Upon graduation, she will be employed as a staff psychologist at the Veterans Hospital in Gainesville, Florida.

Anastasia Wells was married to Arthur M. Wells, Jr., in April, 1967.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and had been approved by all members of that committee. It was submitted to the Dean of the College of Arts and Sciences and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

March, 1970



Dean, College of Arts and Sciences

Dean, Graduate School

Supervisory Committee:


Chairman